UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,874	06/29/2001	Hideki Kobayashi	210679US2SRD	9679

			EXAMINER

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	EXAMINER
	SHARON, AYAL I

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 01/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/893,874	KOBAYASHI ET AL.
	Examiner	Art Unit
	Ayal I Sharon	2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/29/01*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *20,21,31 and 32* is/are allowed.

6)☒ Claim(s) *1-4,9-13,18,19,22-24,29 and 30* is/are rejected.

7)☒ Claim(s) *1,5-8,14-17 and 25-28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All b)☐ Some * c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6/29/01,3/18/03*.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Introduction

1. Claims 1-32 of U.S. Application 09/893,874 filed on 6/29/2001 are presented for examination. This application claims priority to Japanese application 2000-197803, filed on 6/30/2000.

Allowable Subject Matter

2. Claim 20-21 and 31-32 are allowed. The cited prior art does not expressly teach the formulas taught in these claims, nor, in particular, the "recovery rate" of claims 20 and 31, or the "triangular distribution" of claims 21 and 32. Claim 31-32 are computer program claims reciting the equivalent limitations as are recited in method Claims 20-21.

Claim Objections

3. Claim 1 is objected to because of the following informalities: line 7 contains the phrase "a modeling device which perform ...", which should be "... which performs...". Appropriate correction is required.

4. Claims 5-7, 14-16, and 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and all intervening claims. The

cited prior art does not expressly teach the following limitations in combination

with the other limitations of the claims:

and approximate-predicts a distribution of
the number of manufactured products targeted for reuse
by using an average number of manufactured products
per unit period obtained by dividing the number of
manufactured products by a manufacturing period.

5. Claims 8, 17, and 28 are objected to as being dependent upon a rejected base

claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and all intervening claims. The cited prior art does

not expressly teach the following limitations in combination with the other

limitations of the claims:

and approximate-predicts a distribution of
manufactured products in number by using a triangle
distribution having its peak value during entry of
a next generation model.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to
prevent the unjustified or improper timewise extension of the "right to exclude"
granted by a patent and to prevent possible harassment by multiple assignees.
See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re
Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686
F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164
USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644
(CCPA 1969).
   A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may
be used to overcome an actual or provisional rejection based on a nonstatutory
double patenting ground provided the conflicting application or patent is shown to
be commonly owned with this application. See 37 CFR 1.130(b).
   Effective January 1, 1994, a registered attorney or agent of record may
sign a terminal disclaimer. A terminal disclaimer signed by the assignee must
fully comply with 37 CFR 3.73(b).

7. Claims 1, 11, and 22 are provisionally rejected under the judicially created

doctrine of obviousness-type double patenting as being unpatentable over claims

2-4 of copending Application No. 09/818,612. Although the conflicting claims are

not identical, they are not patentably distinct from each other because Claim 1 in

the present application and independent claims 2-4 in the copending application

both concern extracting information pertaining to the life span of parts. The

present application refers to these parts as "objects to be reused" and "objects to

be recycled", while the copending application refers to these parts as "parts

which [are] impossible to upgrade". Examiner finds that it is inherent that parts

which are reused or recycled are inherently "impossible to upgrade".

Corresponding method Claim 11 and computer program Claim 22 are rejected on

the same grounds.

This is a <u>provisional</u> obviousness-type double patenting rejection because

the conflicting claims have not in fact been patented.

8. Claim 1-9, 11-18, and 22-29 are is provisionally rejected under the judicially

created doctrine of obviousness-type double patenting as being unpatentable

over claim 1 of copending Application No. 10/323,792. Although the conflicting

claims are not identical, they are not patentably distinct from each other because

Claim 1 in the present application and independent claim 1 in the copending

application both concern modeling information pertaining to the life span of reuse

and recycle components of a final product, as well as estimating the

environmental impact of these components. Corresponding method Claim 11 and

computer program Claim 22 are rejected on the same grounds.

This is a <u>provisional</u> obviousness-type double patenting rejection because

the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

10. The prior art used for these rejections is as follows:

11. Zhou, Mengchu et al., "Evaluation of Environmentally Conscious Product

Designs". 1998 IEEE Int'l Conf. on Systems, Man, and Cybernetics. Oct. 1998.

vol.4, pp.4057-4061. (Henceforth referred to as "**Zhou**").

12. Anderi, R. et al. "Design for Environment - A Computer-Based Cooperative

Method to Consider the Entire Life Cycle." Proc. EcoDesign '99: 1st Int'l

Symposium on Environmentally Conscious Design and Inverse Manuf. Feb.

1999. pp.380-385. (Henceforth referred to as "**Anderi**").

13. The claim rejections are hereby summarized for Applicant's convenience. The

detailed rejections follow.

14. **Claims 1-4, 9-13, 18-19, 22-24, and 29-30 are rejected under 35 U.S.C. 103(a)**

as being unpatentable over Zhou in view of Anderi.

15. In regards to Claim 1, Zhou teaches the following limitations:

1. An environmental impact estimation apparatus
comprising:

        ... information concerning a plurality of
first objects to be reused and a plurality of
second objects to be recycled; and
(Zhou, expecially: Section 3 "Disassembly Analysis")

The Node Information Matrix (NIM) contains this information.

        ... life cycle modeling to generate a life cycle model,
the life cycle modeling including reading the information
concerning the first objects and the second objects from the
storage device,
(Zhou, especially: Section 2 "Retirement Costs"
and Section 5 "Application to PC Designs)

        The formulas for the different types of cost (Remanufacture,
Recycle, Landfill, Disassembly) in Section 2 constitute the basic equations used
in the model implemented in Section 5.

selecting some of the first objects and second objects which
are diverted to at least one new product from a recovery
product using the information,
(Zhou, especially: Section 5 "Application to PC Designs")

        Section 5 teaches the comparison of "several major activities in PC
recycle and show[s] the retirement treatment benefits of [PC designs] D2 over D1
..." (see p.4061, para. 1).

and combining some of the first objects and the second
objects to fabricate the new product.
(Zhou, especially: Section 5 "Application to PC Designs")

        Zhou, while teaching the abstract mathematical algorithm for optimizing

the life cycle modeling, does not expressly teach its implementation in a concrete

system, such as "a storage device" and "a modeling device" as claimed in the

following limitations:

        a storage device which stores information
concerning a plurality of first objects to be reused
and a plurality of second objects to be recycled; and

> a modeling device which perform life cycle
> modeling to generate a life cycle model,

Anderi, on the other hand, expressly teaches the use of a prototype that

"... integrates already existing tools of product design, like 3D-CAD, as well as

already developed tools, e.g. the evaluation system." (Anderi, p.380, col.2,

para.2).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the teachings of Zhou with those of Anderi,

because Zhou expressly teaches (see p.4061, Section 6 "Future Work", last

paragraph) that: "Finally, we need to develop a CAD tool set built upon the

concept of Design-For-Retirement and multi-lifecycle engineering such that

designers can use it to estimate the retirement timing and performance/cost ratio

of their designs and be guided to reach better designs for multi-lifecycle

environmentally conscious products."

16. In regards to Claim 2, Zhou teaches the following limitations:

> 2. An apparatus according to claim 1, further
> comprising an environmental impact/cost estimating
> device which estimates an environmental impact and cost
> based on the life cycle model generated by the modeling
> device.
> (Zhou, especially: The formulas in Section 2 "Retirement Costs")

17. In regards to Claim 3, Zhou teaches the following limitations:

> 3. An apparatus according to claim 2, which
> further comprises a data base which stores
> environmental impact information and cost information,
>
> the environmental impact information concerning
> respective stages of material acquisition for products,
> manufacturing, distribution, use, recovery and
> discharging,
> (Zhou, expecially: Section 3 "Disassembly Analysis")

The Node Information Matrix (NIM) contains this information.

and wherein the environmental impact/cost estimating
device computes the environmental impact and
cost of the entire series of multi-generation products
based on information generated from the data base and
the life cycle model obtained by the modeling device.
(Zhou, especially: Section 5 "Application to PC Designs")

18. In regards to Claim 4, Zhou teaches the following limitations:

4. An apparatus according to claim 1, further
comprising a predicting device which predicts a supply
quantity of at least one of the first and second
objects using the life cycle model generated by the
modeling device,
(Zhou, especially: The formulas in Section 2 "Retirement Costs")

and an environmental impact/cost estimating device
which estimates environmental impact
and cost to be burdened in the reuse or recycle from
a prediction result obtained by this predicting device.
(Zhou, especially: The formulas in Section 2 "Retirement Costs")

19. In regards to Claim 9, Zhou teaches the following limitations:

9. An apparatus according to claim 4, which
further comprises a data base storing environmental
impact information and cost information,

the environmental impact concerning respective stages of
material acquisition for products, manufacturing,
distribution, use, recovery and discharging,
(Zhou, especially: The formulas in Section 2 "Retirement Costs")

and wherein the environmental impact/cost estimating device
computes the environmental impact and cost of the
entire series of multi-generation products based on
information generated from the data base and the life
cycle modeling result caused by the modeling device.
(Zhou, especially: Section 5 "Application to PC Designs")

20. In regards to Claim 10, Zhou teaches the following limitations:

10. A plan aiding apparatus using a recovery
product, comprising: ,

the life cycle modeling including reading the information
concerning the objects which configure a product from

the storage device,
(Zhou, expecially: Section 3 "Disassembly Analysis")

The Node Information Matrix (NIM) contains this information.

selecting some of the objects which are
diverted to a new product from the recovery product
using the information, and combining selected ones of
the objects to fabricate the new product; and
(Zhou, especially: Section 5 "Application to PC Designs)

Section 5 teaches the comparison of "several major activities in PC recycle and show[s] the retirement treatment benefits of [PC designs] D2 over D1 ..." (see p.4061, para. 1).

Zhou, while teaching the abstract mathematical algorithm for optimizing the life cycle modeling, does not expressly teach its implementation in a concrete system, such as "a storage device" and "a modeling device" as claimed in the following limitations:

a storage device which stores information
concerning reuse and recycle objects;

a modeling device which perform life cycle
modeling to generate a life cycle model,

Anderi, on the other hand, expressly teaches the use of a prototype that "... integrates already existing tools of product design, like 3D-CAD, as well as already developed tools, e.g. the evaluation system." (Anderi, p.380, col.2, para.2).

In addition, Zhou does not expressly teach the following specific features of the apparatus:

a support device which supports the plan of the
new product, the support device configured to allocate
combined object symbols targeted for diversion and
an object symbol of the new product on a screen,

and display input windows in correspondence with the

object symbols and symbol to associate input product
information with the object symbols and symbol,

the input product information containing at least any of
information on product name, previous model, product
useful life, product worth life, manufacturing start
time, and number of manufactured products.

Anderi expressly teaches in detail the use of display input windows and

input product information (see Section 3.1 "The Recycling Interface"). Anderi also

teaches the use of separate object info for the components of a vacuum cleaner

(motor, cable, etc. See Fig.2 and the paragraph below Fig.2.). While Anderi does

not expressly teach the use of dedicated symbols for these components, Zhou

does (See Zhou, Fig.2 and Section 3.2.)

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to modify the teachings of Zhou with those of Anderi,

because Zhou expressly teaches (see p.4061, Section 6 "Future Work", last

paragraph) that: "Finally, we need to develop a CAD tool set built upon the

concept of Design-For-Retirement and multi-lifecycle engineering such that

designers can use it to estimate the retirement timing and performance/cost ratio

of their designs and be guided to reach better designs for multi-lifecycle

environmentally conscious products."

21. **Claims 11-13, 18, 22-24 and 29 are rejected based on the same reasoning as**

claims 1-4 and 9, _supra_. Claims 11-13 and 18 are method claims reciting the

equivalent limitations as are recited in apparatus claims 1-4 and 9 and

taught throughout Zhou and Anderi. Claims 22-24 and 29 are computer

program claims reciting the equivalent limitations as are recited in

apparatus claims 1-4 and 9 and taught throughout Zhou and Anderi.

22. **Claims 19 and 30 are rejected based on the same reasoning as claim 10,**

supra. **Claim 19 is a method claim reciting the equivalent limitations as are**

recited in apparatus claim 10 and taught throughout Zhou and Anderi.

Claim 30 are computer program claims reciting the equivalent limitations

as are recited in apparatus claim 10 and taught throughout Zhou and

Anderi.

Correspondence Information

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Ayal I. Sharon whose telephone number is

(571) 272-3714. The examiner can normally be reached on Monday through

Thursday, and the first Friday of a biweek, 8:30 am – 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Kevin Teska can be reached at (571) 272-3716.

Any response to this office action should be faxed to (703) 872-9306 or

mailed to:

Director of Patents and Trademarks
Washington, DC 20231

Any inquiry of a general nature or relating to the status of this application

or proceeding should be directed to the Tech Center 2100 Receptionist, whose

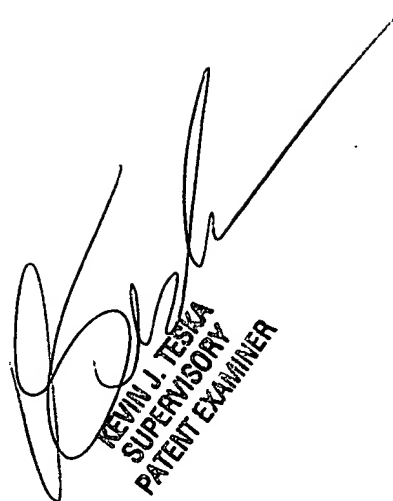telephone number is (571) 272-2100.

Ayal I. Sharon

Art Unit 2123

January 8, 2005

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER